

## **LISTING OF CLAIMS**

(Currently amended) A humanized anti-TAG-72 CC49 antibody comprising:

 a light chain Complementarity Determining Region (L-CDR)1, a L-CDR2,

 and a L-CDR3; and a heavy chain Complementarity Determining Region (H-CDR)1, a H-CDR2,
 and a H-CDR3,

wherein L-CDR3, H-CDR1, H-CDR2 and H-CDR3 comprise murine monoclonal CC49 antibody Complementarity Determining Regions (CDRs) and at least one of L-CDR1 and L-CDR2 comprises are a human monoclonal LEN antibody Complementarity Determining Region (CDR)L-CDR1 and L-CDR2,

wherein the humanized CC49 antibody retains binding affinity for TAG-72 and has reduced immunogenicity, as compared to a parental humanized CC49 antibody.

- 2. (Currently amended) The humanized antibody of claim 1, wherein L-CDR1 comprises is the human monoclonal LEN antibody CDRL-CDR1.
  - 3. (Canceled)
- 4. (Currently amended) The humanized antibody of claim 1, wherein L-CDR2 comprises is the human monoclonal LEN antibody CDRL-CDR2.
  - 5. (Canceled)
- 6. (Currently amended) The humanized antibody of claim 1, wherein both L-CDR1 and L-CDR2 comprise-are human monoclonal LEN antibody CDRsL-CDR1 and L-CDR2, respectively.
  - 7-9. (Canceled)
- 10. (Currently amended) The humanized antibody of claim 1, wherein the parental humanized CC49 antibody comprises three <u>light chain hypervariable regionsL-CDRS</u> and three

heavy chain hypervariable regions H-CDRs of the murine monoclonal CC49 antibody, a variable light chain framework of a human monoclonal LEN antibody, and a variable heavy chain framework of a human monoclonal 21/28 CL antibody.

11. (Currently amended) A humanized anti-TAG-72 CC49 antibody comprising:
a light chain Complementarity Determining Region (L-CDR)1, a L-CDR2,
and a L-CDR3; and a heavy chain Complementarity Determining Region (H-CDR)1, a H-CDR2,
and a H-CDR3,

wherein at least L-CDR3, H-CDR1, H-CDR2 and H-CDR3 eomprise are murine CC49 monoclonal antibody Complementarity Determining Regions (CDRs) L-CDR3, H-CDR1, H-CDR2 and H-CDR3, and wherein L-CDR1 and L-CDR2 are murine CC49 antibody or human LEN antibody L-CDR1 and L-CDR2, and wherein at least one amino acid at position-60, 61, 62, or 64 in the murine CC49 H-CDR2 is replaced with an amino acid at a corresponding position in the human monoclonal 21/28°CL antibody,

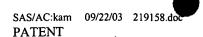
wherein the humanized CC49 antibody retains binding affinity for TAG-72 and has reduced immunogenicity, when compared to a parental humanized CC49 antibody.

- 12. (Previously presented) The humanized antibody of claim 11, wherein an asparagine at position 60 in the murine CC49 H-CDR2 is replaced with a serine.
- 13. (Previously presented) The humanized antibody of claim 11, wherein a threonine at position 97 of the murine CC49 L-CDR3 is replaced with a serine.
  - 14. (Canceled)
- 15. (Currently amended) The humanized antibody of claim 11, wherein L-CDR1 comprises is a human monoclonal LEN antibody Complementarity Determining Region (CDR)L-CDR1.
  - 16. (Canceled)

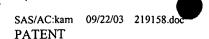
- 17. (Currently amended) The humanized antibody of claim 11, wherein L-CDR2 comprises is a human monoclonal LEN antibody CDRL-CDR2.
  - 18. (Canceled)
- 19. (Currently amended) The humanized antibody of claim 11, wherein both L-CDR1 and L-CDR2 comprise are human monoclonal LEN antibody Complementarity Determining Regions L-CDR1 and L-CDR2, respectively.
  - 20. (Canceled)
- 21. (Previously presented) The humanized antibody of claim 11, wherein a glutamic acid at position 61 in the murine CC49 H-CDR2 is replaced with a glutamine.
- 22. (Previously presented) The humanized antibody of claim 11, wherein an arginine at position 62 in the murine CC49 H-CDR2 is replaced with a lysine.
- 23. (Currently amended) A humanized anti-TAG-72 CC49 antibody comprising:
  a light chain Complementarity Determining Region (L-CDR)1, a L-CDR2,
  and a L-CDR3; and a heavy chain Complementarity Determining Region (H-CDR)1, a H-CDR2,
  and a H-CDR3,

wherein at least L-CDR3, H-CDR1, H-CDR2 and H-CDR3 eomprise-are murine CC49 monoclonal antibody L-CDR3, H-CDR1, H-CDR2 and H-CDR3, and wherein L-CDR1 and L-CDR2 are murine CC49 antibody or human LEN antibody L-CDR1 and L-CDR2, Complementarity Determining Regions (CDRs), and wherein a threonine at position 97 in the murine CC49 L-CDR3 is replaced with a serine,

wherein the humanized CC49 antibody retains binding affinity for TAG-72 and has reduced immunogenicity, when compared to a parental humanized CC49 antibody.



- 24. (Previously presented) The humanized antibody of claim 23, wherein at least one amino acid of positions 60, 61, 62, or 64 in the murine CC49 H-CDR2 is replaced with an amino acid at a corresponding position in the human monoclonal 21/28 CL antibody.
  - 25. (Canceled)
- 26. (Currently amended) The humanized antibody of claim 23, wherein L-CDR1 comprises is a human monoclonal LEN antibody Complementarity Determining Region (CDR)L-CDR1.
  - 27. (Canceled)
- 28. (Currently amended) The humanized antibody of claim 23, wherein L-CDR2 comprises is a human monoclonal LEN antibody CDRL-CDR2.
  - 29. (Canceled)
- 30. (Currently amended) The humanized antibody of claim 23, wherein both L-CDR1 and L-CDR2 comprise are human monoclonal LEN antibody Complementarity Determining Regions L-CDR1 and L-CDR2, respectively.
  - 31-33. (Canceled)
- 34. (Currently amended) A humanized anti-TAG-72 CC49 antibody comprising:
  a light chain Complementarity Determining Region (L-CDR)1, a L-CDR2,
  and a L-CDR3; and a heavy chain Complementarity Determining (H-CDR)1, a H-CDR2, and a
  H-CDR3,
- wherein L-CDR1, L-CDR2, L-CDR3, H-CDR1, H-CDR2 and H-CDR3 are of a murine CC49 antibody, and



wherein (1) a threonine is at position 94 in the L-CDR3, or (2) a serine is at position 97 in the L-CDR3, or (3) a threonine is at position 94 and a serine is at position 97 in the L-CDR3,

wherein the humanized CC49 antibody retains binding affinity for TAG-72 and has reduced immunogenicity, when compared to a parental humanized CC49 antibody.

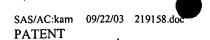
35. (Previously presented) The humanized antibody of claim 34, wherein the threonine is at position 94 in the L-CDR3.

## 36-37. (Canceled)

- 38. (Previously presented) A pharmaceutical composition, comprising a therapeutically effective amount of the humanized antibody of claim 1 in a pharmaceutically acceptable carrier.
  - 39. (Canceled)
- 40. (Previously presented) A composition comprising a functional fragment of the humanized antibody of claim 1, wherein the functional fragment specifically binds TAG-72.
- 41. (Previously presented) The composition of claim 40, wherein the fragment comprises an Fv, an Fab, or an F(ab')<sub>2</sub>.

## 42-47. (Canceled)

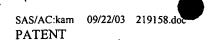
- 48. (Previously presented) The humanized antibody of claim 2, wherein the human L-CDR1 comprises an amino acid sequence as set forth in SEQ ID NO: 7.
- 49. (Previously presented) The humanized antibody of claim 4, wherein the human L-CDR2 comprises an amino acid sequence as set forth in SEQ ID NO: 8.



- 50. ` (Previously presented) The humanized antibody of claim 6, wherein the human L-CDR1 comprises an amino acid sequence as set forth in SEQ ID NO: 7 and the human L-CDR2 comprises an amino acid sequence as set forth in SEQ ID NO: 8.
- 51. (Previously presented) The humanized antibody of claim 11, wherein a lysine at position 64 in the murine CC49 H-CDR2 is replaced with a glutamine.
- 52. (Previously presented) The humanized antibody of claim 11, wherein the amino acid at the corresponding position in the human monoclonal 21/28'CL antibody comprises an amino acid corresponding to position 12, 13, 14, or 16 of the amino acid sequence as set forth in SEQ ID NO: 11.
- 53. (Currently amended) The humanized antibody of claim 11, wherein the parental humanized CC49 antibody comprises three light chain hypervariable regions L-CDRs and three heavy chain hypervariable regions H-CDRs from the murine monoclonal CC49 antibody, a variable light chain framework from a human monoclonal LEN antibody, and a variable heavy chain framework from a human monoclonal 21/28 CL antibody.

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- 54. (Previously presented) The humanized antibody of claim 15, wherein the human L-CDR1 comprises an amino acid sequence as set forth in SEQ ID NO: 7.
- 55. (Previously presented) The humanized antibody of claim 17, wherein the human L-CDR2 comprises an amino acid sequence as set forth in SEQ ID NO: 8.
- 56. (Previously presented) The humanized antibody of claim 19, wherein the human L-CDR1 comprises an amino acid sequence as set forth in SEQ ID NO: 7 and the human L-CDR2 comprises an amino acid sequence as set forth in SEQ ID NO: 8.
- 57. (Currently amended) The humanized antibody of claim 23, wherein the parental humanized CC49 antibody comprises three <u>light chain hypervariable regionsL-CDRs</u> and three <u>heavy chain hypervariable regionsH-CDRs</u> from the murine monoclonal CC49 antibody, a



variable light chain framework from a human monoclonal LEN antibody, and a variable heavy chain framework from a human monoclonal 21/28'CL antibody.

- 58. (Previously presented) The humanized antibody of claim 24, wherein the amino acid at the corresponding position in the human monoclonal 21/28 CL antibody comprises amino acid 12, 13, 14, or 16, respectively, of an amino acid sequence as set forth in SEQ ID NO: 11.
- 59. (Previously presented) The humanized antibody of claim 24, wherein an asparagine at position 60 in the murine CC49 H-CDR2 is replaced with a serine.
- 60. (Previously presented) The humanized antibody of claim 24, wherein a glutamic acid at position 61 in the murine CC49 H-CDR2 is replaced with a glutamine.
- 61. (Previously presented) The humanized antibody of claim 24, wherein an arginine at position 62 in the murine CC49 H-CDR2 is replaced with a lysine.
- 62. (Previously presented) The humanized antibody of claim 24, wherein a lysine at position 64 in the murine CC49 H-CDR2 is replaced with a glutamine.
- 63. (Previously presented) The humanized antibody of claim 26, wherein the human L-CDR1 comprises an amino acid sequence as set forth in SEQ ID NO: 7.
- 64. (Previously presented) The humanized antibody of claim 28, wherein the human L-CDR2 comprises an amino acid sequence as set forth in SEQ ID NO: 8.
- 65. (Previously presented) The humanized antibody of claim 30, wherein the human L-CDR1 comprises an amino acid sequence as set forth in SEQ ID NO: 7 and the human L-CDR2 comprises an amino acid sequence as set forth in SEQ ID NO: 8.
- 66. (Previously presented) The humanized antibody of claim 34, wherein the serine is at position 97 in the L-CDR3 from the murine CC49 antibody.

- 67. (Previously presented) The humanized antibody of claim 34, wherein the threonine is at position 94 in the L-CDR3 from the murine CC49 antibody and the serine is at position 97 in the L-CDR3 from the murine CC49 antibody.
- 68. (Previously presented) The humanized antibody of claim 11, wherein an asparagine at position 60 in the murine CC49 H-CDR2 is replaced with a serine, a glutamic acid at position 61 in the murine CC49 H-CDR2 is replaced with a glutamine, an arginine at position 62 in the murine CC49 H-CDR2 is replaced with a lysine, and a lysine at position 64 in the murine CC49 H-CDR2 is replaced with a glutamine.
- 69. (Currently amended) A kit comprising a container comprising the humanized antibody of claim 1 and instructions for using the humanized antibody to treat or detect a cancer cell expressing TAG-72.

Endl.